

Trend Study 19A-8-97

Study site name: The Basin.

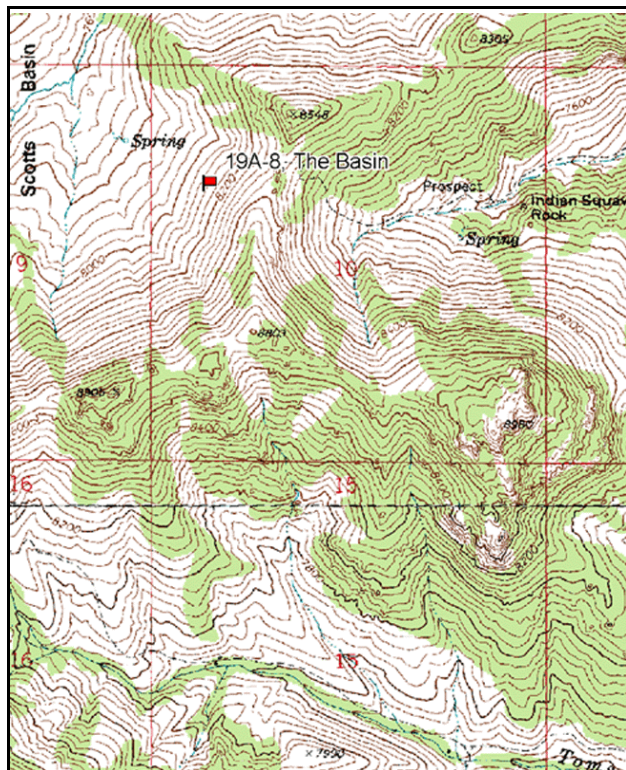
Vegetation type: Big Sagebrush-Grass.

Compass bearing: frequency baseline 288 degrees magnetic.

Frequency belt placement: line 1 (11 & 95ft), line 2 (34ft), line 3 (59ft), line 4 (71ft).

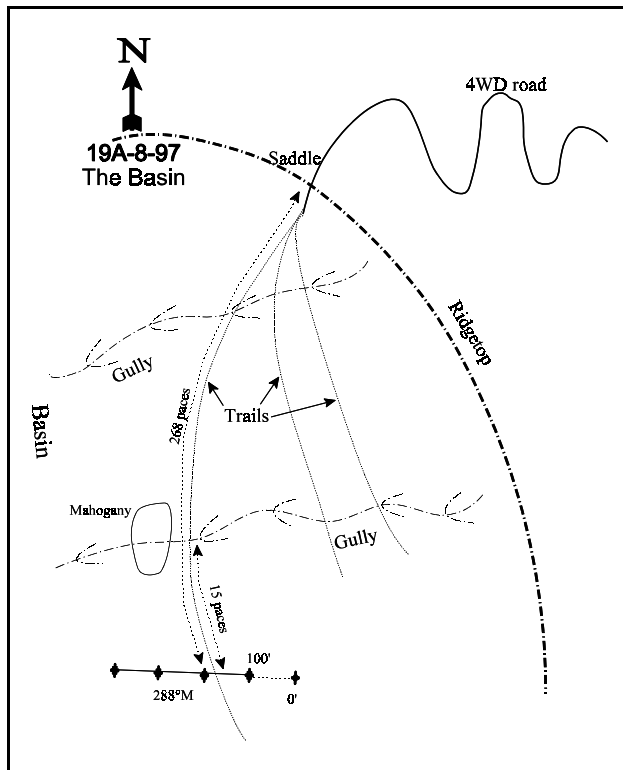
LOCATION DESCRIPTION

From the bridge outside the CCC camp near Callao, take the fork off the main Snake Valley Road going north-west for 0.85 miles to a fork, keep right and go 0.8 miles to an intersection. Turn left toward the mountains, then keep right at the fork after 0.1 miles. Continue up 1.65 miles, keep right at the fork to Tom's Canyon. Continue up Middle Canyon 3.35 miles to the top. Stop where the road ends in a saddle overlooking The Basin. From here, there are 3 unmaintained trails down the hill into The Basin. Take the lowest trail and hike southwest for 268 paces to a spot just past a small gully and the last clump of mahogany. The baseline is above the trail 7 paces to the red fencepost marking the 100 foot baseline stake.



Map Name: Goshute Canyon

Township 11S, Range 18W, Section 10



Diagrammatic Sketch

GPS: NAD 27, UTM 12S 4418879 N 255009 E

DISCUSSION

The Basin - Trend Study No. 19A-8

*** SUSPENDED - This site was suspended in 2002 upon request of the biologist. The site narrative and data tables are included from the 1997 report.

The Basin study is located midway up the Deep Creek Mountain range in a large open basin surrounded by steep slopes and rugged cliffs. Historically private property, land in this unique area was purchased by The Nature Conservancy and traded to the BLM. The study is located at approximately 8,200 feet in elevation on the eastern side of the basin. It has a westerly aspect with a slope of 41%. This sagebrush-grass habitat type is in deer and elk summer range. In 1989, 5 elk were seen on the ridge to the south with fresh deer sign on the site. Also in 1989, livestock sign was evident, but not fresh. In 1997, a mule deer antler drop was found above the site and some blue grouse were seen on the road to the site. Red ants were extremely common during both surveys. Nearby mahogany and pinyon stands provide good cover. Springs in the bottom of the basin provide a perennial water source about one-quarter mile away.

Soils are the Podmor/Onaqui type, a very cobbly soil highly susceptible to water erosion. Soil textural analysis indicates a sandy loam with a slightly acidic pH (6.4). Effective rooting depth was estimated to be 10 inches and the soil temperature measured at 12 inches averaged 55°F. Soil on the site is relatively shallow, with a gravelly surface character. Some soil movement is apparent, but it appears that vegetation is holding soil movement to a minimum.

Mountain big sagebrush is the key species with an estimated density of 8,820 plants/acre in 1997 and providing 84% of the browse cover. The decrease from the estimated 19,066 in 1989 is due to the much larger sample size now used to estimate browse density which gives more accurate browse population estimates. The sagebrush on this site are low growing, averaging only 15 inches in height. Even though the sagebrush are relatively short in stature, the uniform stand of mature plants contributes 14% average canopy cover. Age structure of the population in 1997 is nearly that recorded in 1989 with 71% of the plants classified as mature. In 1989, the mountain big sagebrush showed moderate to heavy use and good vigor. In 1997, utilization was mostly light to moderate with the plants still showing good vigor. Slenderbush eriogonum had an estimated density of 480 plants/acre in 1997. This plant was misidentified as corymbed eriogonum in the previous survey. Stickyleaf low rabbitbrush, broom snakeweed and mountain snowberry were encountered in low numbers. Clumps of curlleaf mountain mahogany occur on the surrounding slopes and rocky ridges. Scattered single-leaf pinyon and Utah juniper dot the site and surrounding hillsides, but pose no threat of encroachment.

Perennial grass sum of nested frequency has declined, mostly due to significant decreases in muttongrass and Sandberg bluegrass. Sheep fescue is currently the dominant grass. Bluebunch wheatgrass abundance has changed very little since 1989. One additional species was encountered in 1997, subalpine needlegrass. Overall, the grasses show little or no use and exhibit litter build up from the previous season.

Perennial forb sum of nested frequency has decreased since 1989. Many of the plants encountered on the site are low growing sprawling species. Some of the more abundant species include Fendler sandwort, blue-eyed Mary, lupine, longleaf phlox, and tapertip hawksbeard.

1989 APPARENT TREND ASSESSMENT

Signs of soil erosion were observed, as there appears to be excessive pavement. Contingent upon vegetation trends, soil conditions are expected to improve. The dense mountain big sagebrush stand provides adequate forage and ground cover. The herbaceous understory is also in good condition and appears to be improving. Annual production on most plants exceeds wildlife demands. While the current trend is assessed as stable to possibly improving, vegetative conditions will depend on future livestock grazing management.

1997 TREND ASSESSMENT

Erosion does not appear to be serious at this time. There is still adequate vegetation and litter cover to reduce erosion, although sum of nested frequency for the herbaceous understory has declined since 1989. Soil trend is stable and will continue to depend upon the herbaceous understory cover. The browse trend is stable although there is an apparent decrease in mountain big sagebrush density since 1989. This decrease is due to the increased sample size now used for the number of dead plants in the population cannot explain this decrease. Currently, mountain big sagebrush age structure and vigor are similar to that reported in 1989, while the amount of utilization has declined. The herbaceous understory trend is downward due to a great decline in perennial species sum of nested frequency.

TREND ASSESSMENT

soil - stable (3)

browse - stable (3)

herbaceous understory - downward (1)

HERBACEOUS TRENDS --

Herd unit 19A, Study no: 8

T y p e	Species	Nested Frequency		Quadrat Frequency		Average Cover %
		'89	'97	'89	'97	
G	Agropyron spicatum	53	59	22	25	.74
G	Festuca ovina	187	208	74	70	9.50
G	Poa fendleriana	_b 172	_a 80	68	34	1.41
G	Poa secunda	_b 200	_a 112	82	51	2.47
G	Sitanion hystrix	9	2	5	2	.01
G	Stipa columbiana	_a -	_b 16	-	7	.28
Total for Annual Grasses		0	0	0	0	0
Total for Perennial Grasses		621	477	251	189	14.42
Total for Grasses		621	477	251	189	14.42
F	Arabis spp.	_b 57	_a 16	31	6	.03
F	Arenaria fendleri	_b 244	_a 128	90	51	1.66
F	Aster spp.	-	4	-	2	.03
F	Astragalus spp.	14	8	7	4	.07
F	Castilleja angustifolia	17	19	9	10	.10
F	Castilleja chromosa	2	-	1	-	-
F	Calochortus nuttallii	12	11	8	6	.03
F	Collomia linearis (a)	-	7	-	4	.04
F	Comandra pallida	1	-	1	-	-
F	Collinsia parviflora (a)	-	105	-	38	.31
F	Crepis acuminata	82	68	36	29	.86
F	Delphinium nuttallianum	_a -	_b 63	-	31	.40
F	Erigeron spp.	_a -	_b 44	-	20	.28
F	Eriogonum jamesii	_b 114	_a -	49	-	-
F	Hackelia patens	_a -	_b 16	-	7	.11

Type	Species	Nested Frequency		Quadrat Frequency		Average Cover %
		'89	'97	'89	'97	'97
F	<i>Linum lewisii</i>	_b 38	_a 8	15	5	.06
F	<i>Lomatium</i> spp.	6	2	3	1	.00
F	<i>Lupinus arbustus calcaratus</i>	114	102	50	42	4.23
F	<i>Microsteris gracilis</i> (a)	-	32	-	13	.19
F	<i>Penstemon humilis</i>	_b 78	_a 59	37	27	.61
F	<i>Penstemon</i> spp.	-	2	-	1	.15
F	<i>Phlox hoodii</i>	-	3	-	1	.00
F	<i>Phlox longifolia</i>	_b 131	_a 95	57	44	.32
F	<i>Polygonum douglasii</i> (a)	-	13	-	8	.04
F	<i>Ranunculus</i> spp.	_b 142	_a -	65	-	-
F	<i>Senecio integerrimus</i>	-	1	-	1	.03
F	<i>Sedum lanceolatum</i>	_a 6	_b 15	2	6	.10
F	<i>Sphaeralcea coccinea</i>	-	3	-	1	.03
F	<i>Taraxacum officinale</i>	_a 2	_b 22	1	12	.19
F	<i>Townsendia</i> spp.	6	-	4	-	-
Total for Annual Forbs		0	157	0	63	0.59
Total for Perennial Forbs		1066	689	466	307	9.31
Total for Forbs		1066	846	466	370	9.90

Values with different subscript letters are significantly different at alpha = 0.10

BROWSE TRENDS --

Herd unit 19A, Study no: 8

Type	Species	Strip Frequency	Average Cover %
		'97	'97
B	<i>Artemisia tridentata vaseyana</i>	96	13.99
B	<i>Cercocarpus ledifolius</i>	0	.00
B	<i>Chrysothamnus viscidiflorus viscidiflorus</i>	11	.25
B	<i>Eriogonum microthecum</i>	16	.52
B	<i>Gutierrezia sarothrae</i>	1	-
B	<i>Pinus monophylla</i>	1	1.73
B	<i>Symphoricarpos oreophilus</i>	3	.06
Total for Browse		128	16.56

CANOPY COVER --

Herd unit 19A, Study no: 8

Species	Percent Cover '97
Pinus monophylla	2

BASIC COVER --

Herd unit 19A, Study no: 8

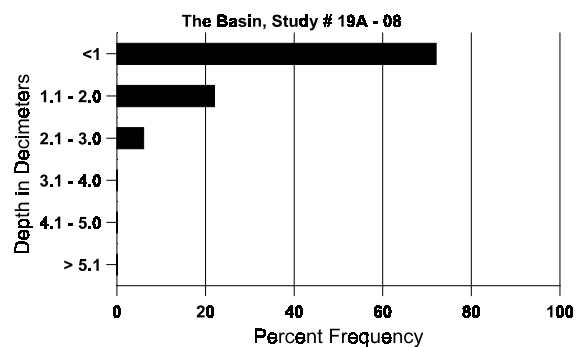
Cover Type	Nested Frequency '97	Average Cover %	
		'89	'97
Vegetation	345	16.50	42.42
Rock	89	2.00	1.91
Pavement	323	52.50	39.23
Litter	361	22.00	29.03
Cryptogams	10	0	.05
Bare Ground	193	7.00	3.95

SOIL ANALYSIS DATA --

Herd Unit 19A, Study no: 8, The Basin

Effective rooting depth (in)	Temp °F (depth)	pH	%sand	%silt	%clay	%0M	PPM P	PPM K	dS/m
9.8	55.0 (12.2)	6.4	61.3	22.2	16.6	3.2	10.1	176.0	0.7

Stoniness Index



PELLET GROUP FREQUENCY --

Herd unit 19A, Study no: 8

Type	Quadrat Frequency '97
Deer	13
Cattle	4

BROWSE CHARACTERISTICS --

Herd unit 19A, Study no: 8

A G R E	Y R	Form Class (No. of Plants)										Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4					
Artemisia tridentata vaseyana																			
S	89	13	-	-	-	-	-	-	-	-	13	-	-	-	866			13	
	97	23	-	-	-	-	-	-	-	-	23	-	-	-	460			23	
Y	89	32	10	-	-	-	-	-	-	-	41	-	1	-	2800			42	
	97	38	11	2	-	-	-	-	-	-	51	-	-	-	1020			51	
M	89	2	101	109	-	-	-	-	-	-	206	1	5	-	14133	7	13	212	
	97	219	94	2	-	-	-	2	-	-	308	6	3	-	6340	15	25	317	
D	89	21	7	4	-	-	-	-	-	-	31	-	1	-	2133			32	
	97	56	9	5	3	-	-	-	-	-	57	-	-	14	1460			73	
X	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	600			30	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>								
'89		41%			40%			02%			-54%								
'97		26%			02%			04%											
Total Plants/Acre (excluding Dead & Seedlings)												'89	19066	Dec:	11%				
												'97	8820		17%				
Cercocarpus ledifolius																			
S	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	97	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>								
'89		00%			00%			00%											
'97		00%			00%			00%											
Total Plants/Acre (excluding Dead & Seedlings)												'89	0	Dec:	-				
												'97	0		-				
Chrysothamnus viscidiflorus viscidiflorus																			
Y	89	1	-	-	-	-	-	-	-	-	1	-	-	-	66			1	
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
M	89	2	-	-	-	-	-	-	-	-	2	-	-	-	133	7	12	2	
	97	16	-	-	1	-	-	-	-	-	17	-	-	-	340	15	20	17	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>								
'89		00%			00%			00%			+41%								
'97		00%			00%			00%											
Total Plants/Acre (excluding Dead & Seedlings)												'89	199	Dec:	-				
												'97	340		-				

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Eriogonum microthecum																		
S	89	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	97	1	-	-	-	-	-	-	-	-	-	-	-	20			1	
Y	89	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	97	3	-	-	1	-	-	-	-	-	-	-	-	80			4	
M	89	16	9	1	-	-	-	-	-	-	-	-	-	1733	7	7	26	
	97	20	-	-	-	-	-	-	-	-	-	-	-	400	7	9	20	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'89		35%			04%			00%			-72%							
'97		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'89	1733	Dec:	-			
												'97	480		-			
Gutierrezia sarothrae																		
M	89	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0	
	97	1	-	-	-	-	-	-	-	-	-	-	-	20	-	-	1	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'89		00%			00%			00%										
'97		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'89	0	Dec:	-			
												'97	20		-			
Pinus monophylla																		
S	89	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	97	-	-	-	1	-	-	-	-	-	-	-	-	20			1	
M	89	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0	
	97	-	-	-	-	-	-	1	-	-	-	-	-	20	-	-	1	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'89		00%			00%			00%										
'97		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'89	0	Dec:	-			
												'97	20		-			
Symphoricarpos oreophilus																		
M	89	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0	
	97	1	-	-	2	-	-	-	-	-	-	-	-	60	26	68	3	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'89		00%			00%			00%										
'97		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'89	0	Dec:	-			
												'97	60		-			

SUMMARY

WILDLIFE MANAGEMENT UNIT 19A - WEST DESERT, DESERT MOUNTAIN RANGES

Of the eight existing range trend studies in this management unit, four were reread in 2002 and four were suspended. In addition, two new studies were established. The studies in Sevy Canyon, Granite Creek, and The Basin were suspended because of access problems as these studies now lie within BLM wilderness study areas. The Sevy Canyon study was surveyed by the project leader and was noted as being poor representative site in 2002. The study at Chokecherry Spring was also suspended as it does not represent critical range for big game and lies outside state boundaries on Indian lands.

Precipitation data for this management unit was summarized using weather station data from Ibapah and Callao. Total annual precipitation and seasonal distribution of precipitation were both analyzed. During the past two decades, total annual precipitation has been normal or above normal for most years with the exception of scattered years during the late 1980's and early 1990's. Spring precipitation (March-May), which is particularly important for cool season species, was below normal for three straight seasons from 2000-2002 at Ibapah, and only 41% of normal in the spring of 2002 at Callao. Fall precipitation (September-November) was also below normal at both stations in 2001, especially at Callao (40%). Many of the vegetation changes reported in 2002 can be explained by the current drought, primarily low fall and spring precipitation preceding the 2002 sampling.

There were no upward trends reported for soils, browse, or the herbaceous component on any studies that were reread in this unit in 2002. Soil trend was downward on two sites, and stable on two others. Downward soil trends are typical during periods of drought, which result from increased bare soil and declines in vegetation and litter cover. Decreases in cover and nested frequency of herbaceous species also have additive effects on soil trend and condition. These changes in ground cover result in less protective cover on the soil surface, increasing the erosion potential on a site.

Two studies had downward browse trends in 2002, with two others remaining stable. Downward browse trends are the result of key browse populations showing increased decadence, reduced vigor, and a decline in reproduction. Stansbury cliffrose, basin big sagebrush, and shadscale represent the key browse on the studies that were resampled in 2002. The key browse showed increased decadence on three sites, decreased reproduction on three sites, and reduced vigor on all four sites that were resampled in 2002.

Herbaceous trends were slightly down on two sites, and stable on two others. The herbaceous component is often most effected by dry conditions, especially perennial forbs. Sum of nested frequency values for perennial grasses and forbs declined on three of the four sites that were reread in 2002. Average cover and nested frequency values of cheatgrass decreased on all four sites in 2002 as well. The forb component at the Trail Gulch and Wood Canyon studies is virtually non-existent, while the forb component at the Ochre Mountain and Durse Canyon studies is limited.

A trend summary table of each study follows.